

Appl. No. 10/526,342  
Amendment Dated 2/28/2007

Attorney Docket No.: DN 99-009

### REMARKS

Claims 1-20 are pending in this application.

Claims 1-20 are rejected.

In the accompanying Listing of Claims, claims 1, 4, 7-9 and 12 have been amended and claims 2, 10 and 17-20 have been canceled without prejudice. After entry of the amendment, claims 1, 3-9 and 11-16 remain pending.

### Claim Rejections Under 35 U.S.C. § 102

Claims 1-3, 7-11 and 15-16 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent 3,150,926 (Pope). Applicant has canceled claims 2 and 10 and respectfully traverses the rejection of claims 1, 3, 7-9, 11 and 15-16. Independent claim 1 recites:

carbonating the calcium hydroxide with carbon dioxide gas and simultaneously comminuting for a time sufficient to produce a calcium carbonate having at least about a 90 weight percent conversion to calcium carbonate and having a solids concentration of at least about 92 weight percent.

Support in the Specification for simultaneous comminution can be found on page 7, line 23-page 8, line 13, Example Set 2, page 14, line 1-page 16, line 21, and Example Set 3, page 17, line 1-page 18, line 18. Support in the Specification for a solids concentration of at least about 92 weight percent can be found in Table 4, page 15 and Table 5, page 18.

Pope neither discloses nor suggests these features. Pope produces calcium carbonate by carbonating a mechanically fluidized bed of a mixture of calcium hydroxide and water. Pope neither discloses nor suggests the features of claim 1 in which calcium hydroxide is carbonated and simultaneously comminuted for a time sufficient to produce a calcium carbonate having a solids concentration of at least about 92 weight percent. Pope produces calcium carbonate having a solids content of 80 to 90 percent by weight, preferably 82 to 87 percent by weight (col. 7, lines 66-75). Pope neither discloses nor suggests the feature of claim 1 in which calcium carbonate is produced having a solids concentration of at least about 92 weight percent. The entirety of Pope makes no

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mention of carbonating and simultaneously comminuting calcium hydroxide to produce a calcium carbonate having a solids concentration of at least about 92 weight percent. Therefore, Pope does not anticipate claim 1, and claim 1 should be patentable over Pope.

Claims 3 and 7-8 are dependent on claim 1 and should be patentable over Pope for at least the same reasons. Withdrawal of this rejection is respectfully requested.

Independent claim 9 recites:

- (c) comminuting the at least partially converted calcium hydroxide; and
- (d) repeating alternating steps of carbonating and comminuting for a time sufficient to substantially convert the calcium hydroxide to calcium carbonate having at least about a 90 weight percent conversion to calcium carbonate and having a solids concentration of at least about 92 weight percent.

Support in the Specification for alternating steps of carbonating and comminuting can be found on page 7, lines 1-4 and Example Set 1, page 12, line 1-page 13, line 16. Support in the Specification for a solids concentration of at least about 92 weight percent can be found in Table 3, page 13.

Pope neither discloses nor suggests these features. Pope produces calcium carbonate by carbonating a mechanically fluidized bed of a mixture of calcium hydroxide and water. Pope neither discloses nor suggests the features of claim 9 in which partially converted calcium hydroxide is comminuted and in which carbonation and comminution are repeated alternately to produce a calcium carbonate having a solids concentration of at least about 92 weight percent. The entirety of Pope makes no mention of carbonating and comminuting calcium hydroxide to produce a calcium carbonate having a solids concentration of at least about 92 weight percent. Therefore, Pope does not anticipate claim 9, and claim 9 should be patentable over Pope.

Claims 11 and 15-16 are dependent on claim 9 and should be patentable over Pope for at least the same reasons. Withdrawal of this rejection is respectfully requested.

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**Claim Rejections Under 35 U.S.C. § 103**

Claims 4-6, 12-14 and 17-20 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent 3,150,926 (Pope). Applicant has canceled claims 17-20 without prejudice and respectfully traverses the rejection of claims 4-6 and 12-14.

The Action alleges that it would have been obvious to use the process of making calcium hydroxide taught by Pope to make the 98 percent calcium hydroxide that is required by Pope. The Action further alleges that it would have been obvious to produce a calcium hydroxide substantially free from water by mixing calcium oxide with water by the process of Pope. Applicant respectfully submits that Pope teaches away from producing a calcium hydroxide that is substantially free from water, having at least about 92 weight percent solids. Pope discloses a process for producing calcium carbonate that requires an excess of water to prevent excessively high temperatures, sufficient excess water being used such that the carbonate product is discharged in a preferred range of 82 to 87 percent total solids by weight (col. 3, lines 15-23). Pope further discloses that a lowering of the excess water results in excessively high temperatures which have a detrimental effect, since there is insufficient water to be vaporized as steam while absorbing the enormous quantity of exothermic heat generated (col. 3, lines 24-30). Moreover, Pope discloses that, as the quantity of carbonate produced exceeds much beyond 90 percent, it is accompanied by a corresponding increase in free lime content owing to the lack of complete reaction of carbon dioxide with alkali metal hydroxide (col. 7, lines 68-72). As such, Pope teaches away from producing a calcium hydroxide that is substantially free from water, having at least about 92 weight percent solids.

For at least the reasons stated above, Pope fails to disclose or suggest forming a calcium hydroxide from a mixture of calcium oxide and water wherein the calcium hydroxide is at least about 92 percent solids (claims 4 and 12), maintaining the mixture at a temperature of up to about 600 degrees Fahrenheit (claims 5 and 13), or forming calcium hydroxide having at least about 98 percent conversion to calcium hydroxide (claims 6 and 14). Therefore, Pope fails to disclose or suggest claims 4-6 and 12-14. Withdrawal of this rejection is respectfully requested.

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### **CONCLUSION**

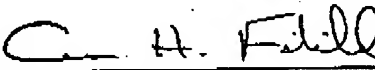
Applicant submits that all rejections have been overcome and that the present application is in condition for allowance. Reconsideration of the present application and allowance are requested.

Should Examiner not agree with Applicants' position, a telephone interview is respectfully requested to discuss any remaining issues and to expedite the eventual allowance of the application.

No additional fees are believed due for the filing of this amendment and response. Should additional fees be required, please charge these fees to Minerals Technologies Inc. Deposit Account No. 13-3639.

Respectfully submitted,

Date: February 28, 2007

  
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